

1. A machine for securing a border wire on a mattress inner spring comprising:

a support for supporting the mattress inner spring and border wire;

5 a clip applicator for applying clips to the mattress inner spring and the border wire to secure the border wire to the mattress inner spring;

a movement generating system for effecting relative movement between the mattress inner spring and border wire, and said clip applicator, such that said clip applicator successively secures clips to the mattress inner  
10 spring and the border wire around a perimeter of the mattress inner spring;

a controller controlling activation and deactivation of said clip applicator and movement generating system; and

a clip applicator feed system configured to receive and feed to said clip applicator a plurality of non-coiled strips of clips.

2. The machine of claim 1 wherein said support positions the mattress inner spring and border wire in one of a substantially vertical attitude and a substantially horizontal attitude.

5 3. The machine of claim 1 wherein said support positions the mattress inner spring and border wire in a substantially vertical attitude.

4. The machine of claim 1 wherein said movement generating system advances the mattress inner spring and border wire along said support such that said clip applicator secures clips to the mattress inner spring and the border wire along an edge of the mattress inner spring, and thereafter rotates  
10 the mattress inner spring and border wire 90° to present another edge of the mattress inner spring and border wire to said clip applicator for application of clips thereto.

5. The machine of claim 1 wherein said clip applicator feed system comprises a track along which the strips of clips travel, said track  
15 having an first feed end into which an operator feeds strips of clips and a second clip applicator end operably connected to said clip applicator for supplying clips to said clip applicator.

6. The machine of claim 5 wherein said track is tubular having a substantially rectangular cross-section marginally larger than a cross-section of the strip of clips.

5 7. The machine of claim 5 wherein said support comprises a first portion against which one edge of the mattress inner spring and border wire rests and a second portion against which one side of the mattress inner spring and border wire rests, and wherein said first feed end of said track is accessible to an operator through said second portion of said support.

10 8. The machine of claim 5 wherein said track includes at least one clip feed device which moves the strips of clips along said track.

9. The machine of claim 8 wherein said clip feed device comprises a air cylinder.

15 10. The machine of claim 5 wherein said track includes a low clip sensing device which senses a low clip condition of said clip applicator feed system.

11. The machine of claim 10 wherein said low clip sensing device comprises a proximity switch.

12. The machine of claim 5 wherein said track includes a pair of clip feed devices which move the strips of clips along said track, and a low clip sensing device, disposed between said pair of clip feed devices, which senses a low clip condition of said clip applicator feed system.

5                   13. The machine of claim 12 wherein said clip feed devices comprise air cylinders, and said low clip sensing device comprises a proximity switch.

10                   14. The machine of claim 1 wherein the mattress inner spring has a pair of border wires positioned in opposed relation on opposite sides thereof, and wherein said machine comprises a pair of clip applicators for applying clips to the mattress inner spring and the pair of border wires to secure the border wires to the mattress inner spring.

15. A machine for securing a border wire on a mattress inner spring comprising:

a support for supporting the mattress inner spring and border wire;

5 a clip applicator for applying clips to the mattress inner spring and the border wire to secure the border wire to the mattress inner spring;

a movement generating system for effecting relative movement between the mattress inner spring and border wire, and said clip applicator, such that said clip applicator successively secures clips to the mattress inner  
10 spring and the border wire around a perimeter of the mattress inner spring;

a clip applicator feed system configured to receive and feed to said clip applicator a plurality of non-coiled strips of clips; and

a controller controlling activation and deactivation of said clip applicator, movement generating system and clip applicator feed system.

16. The machine of claim 15 wherein said support positions the mattress inner spring and border wire in one of a substantially vertical attitude and a substantially horizontal attitude.

5 17. The machine of claim 15 wherein said support positions the mattress inner spring and border wire in a substantially vertical attitude.

18. The machine of claim 15 wherein said movement generating system advances the mattress inner spring and border wire along said support such that said clip applicator secures clips to the mattress inner spring and the border wire along an edge of the mattress inner spring, and  
10 thereafter rotates the mattress inner spring and border wire 90° to present another edge of the mattress inner spring and border wire to said clip applicator for application of clips thereto.

19. The machine of claim 15 wherein said clip applicator feed system comprises a track along which the strips of clips travel, said track  
15 having an first feed end into which an operator feeds strips of clips and a second clip applicator end operably connected to said clip applicator for supplying clips to said clip applicator.

20. The machine of claim 19 wherein said track is tubular having a substantially rectangular cross-section marginally larger than a cross-section of the strip of clips.

5 21. The machine of claim 19 wherein said support comprises a first portion against which one edge of the mattress inner spring and border wire rests and a second portion against which one side of the mattress inner spring and border wire rests, and wherein said first feed end of said track is accessible to an operator through said second portion of said support.

10 22. The machine of claim 19 wherein said track includes at least one clip feed device which moves the strips of clips along said track.

23. The machine of claim 22 wherein said clip feed device comprises a air cylinder.

15 24. The machine of claim 19 wherein said track includes a low clip sensing device which senses a low clip condition of said clip applicator feed system.

25. The machine of claim 24 wherein said low clip sensing device comprises a proximity switch.

26. The machine of claim 19 wherein said track includes a pair of clip feed devices which move the strips of clips along said track, and a low clip sensing device, disposed between said pair of clip feed devices, which senses a low clip condition of said clip applicator feed system.

5                   27. The machine of claim 26 wherein said clip feed devices comprise air cylinders, and said low clip sensing device comprises a proximity switch.

10                   28. The machine of claim 15 wherein the mattress inner spring has a pair of border wires positioned in opposed relation on opposite sides thereof, and wherein said machine comprises a pair of clip applicators for applying clips to the mattress inner spring and the pair of border wires to secure the border wires to the mattress inner spring.